Industry 4.0 Skills Challenge

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The 4th Industrial Revolution is HAPPENING NOW.

The world will invest $57.6B on cognitive and AI systems in 2021. Source: International Data Corporation

Technology adoption by 2022 (% of companies)
Source: Future of Jobs 2018, WEF

End of 18th c. | Start of 20th c. | Start of 70's | Today
Source: Accenture
The 4th Industrial Revolution is key to boost economic growth.

Most ASEAN countries lag behind the rest of the world in terms of labor productivity. Growing investment in technology presents an opportunity for growth.

Deploying disruptive technologies could raise the GDP of ASEAN by up to 12% by 2030.

Source: J. Woetzel et al.
Tasks will increasingly be automated, freeing up more time for the workers.

Source: Man and Machine in Industry 4.0, BCG

Source: Future of Jobs 2018, WEF

**Ratio of human-machine work hours 2018 vs 2022**

- **Reasoning and decision-making**: 19% (Human) vs 28% (Machine)
- **Coordinating, developing, managing, and advising**: 19% (Human) vs 29% (Machine)
- **Communicating and interacting**: 23% (Human) vs 31% (Machine)
- **Administrating**: 25% (Human) vs 44% (Machine)
- **Performing physical and manual work activities**: 31% (Human) vs 44% (Machine)
- **Identifying and evaluating job-relevant information**: 29% (Human) vs 46% (Machine)
- **Performing complex and technical activities**: 34% (Human) vs 46% (Machine)
- **Looking for and receiving job-related information**: 36% (Human) vs 55% (Machine)
- **Information and data processing**: 47% (Human) vs 62% (Machine)
However, automation also puts millions of workers at risk of unemployment.

Proportion of displaced jobs by sector distribution to each ASEAN-6 country (2018-2028)

In the ASEAN-6, which accounts for more than 80% of the ASEAN workforce, at least 56% of wage workers face high risk of automation.
Job displacement will be offset by job creation.

Net effect of displacement and income by industry sector, in millions of full-time equivalent (FTE) workers (2018-2028)

Source: Technology and the future of ASEAN jobs, Oxford Economics, Cisco
Switching roles and industries will demand new skills.

Of all the core skills required to perform a job, **42%** will change from **2018 to 2022**.

Source: Future of Jobs 2018, WEF

**1 IN EVERY 8 WORKERS** may need to switch occupational categories by 2030. That's 375 M people rebuilding their careers!

Source: Jobs Lost, Jobs Gained Report 2017, MGI
If we act now, we can reverse this consequence and improve employment rates.

Unemployment rate trend

Source: ASEAN Secretariat
Recommendation 1: Embrace 4IR, brace workers for the transition

**Talent Shortage**
With the rapidly changing nature of work, the skills gap continues to widen. Industry 4.0 critical skills such as strategic thinking and innovation are difficult to find in the ASEAN region.

![Critical skills for enterprises in ASEAN](chart)

Source: Education to Employment, MGI

"The capacity to learn is a gift; the ability to learn is a skill; the willingness to learn is a choice."

Brian Herbert, author
Children entering primary school today will likely end up in jobs that do not yet exist.

Source: Future of Jobs 2018, WEF

Educational system that responds to labor market demands

Skills of university graduate do not match enterprise needs

MALAYSIA
Graduates who undergo Technical Vocational Education and Training (TVET) have more than 90% chance of being employed by large corporations, including multinational companies.

Source: MalayMail

Source: Survey of ASEAN employers on skills and competitiveness 2014, ILO
Mid-career training that facilitates viable and desirable job transition

**SINGAPORE**
Training grants and SkillsFuture Credit are offered by the government to support individuals and enterprises to pursue skill training, benefiting over **285,000 Singaporeans** as of February 2018.

Source: Technology and the future of ASEAN jobs, Oxford Economics, Cisco
Growing Inequality

Women and workers with lower skill level and educational attainment are more likely to be displaced yet are less likely to undergo training.

Recommendation 2: Build an integrated ASEAN labor market

To view human capital as a shared regional resource

Thailand attracts 55% of intra-ASEAN labor migration.

MYS-SGP consist 16% of intra-ASEAN labor migration.

IDN-MYS consist 16% of intra-ASEAN labor migration.

Country
- Philippines, Indonesia, Vietnam
- Thailand, Malaysia, Singapore

Need addressed by labor mobility
- Skilled labor
- Affordable labor

Source: ASEAN Briefing

Proportion of Intra-ASEAN labor migration (%)
- Source: ASEAN Human Capital Outlook, WEF
- ≤16
- 16-29
- 29-42
- ≥42

Labor force participation rate of immigrant population(%)
- Source: ILO (2015)
- ≤0
- 0-13
- ≥100

LEGENDS
Free movement of skilled labor to fill in the gaps

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The Fourth Industrial Revolution (4IR) promises economic prosperity, societal progress and individual flourishing, yet our grasp of the opportunities in this new world of work depend crucially on our resilience against the threats of transformation. To prevent a lose-lose scenario — technological change accompanied by talent shortages, mass unemployment and growing inequality — it is critical that businesses engage in developing their existing workforces, that individuals take a proactive approach to their own lifelong learning, and that governments create an enabling environment to assist in these efforts.
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